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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/831,460	05/08/2001	Dagobert Michel De Leeuw	PHN 17 732	4381

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PHILIPS INTELLECTUAL PROPERTY & STANDARDS
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EXAMINER
ZACHARIA, RAMSEY E

ART UNIT	PAPER NUMBER
1773	

DATE MAILED: 09/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application N .	Applicant(s)
	09/831,460	DE LEEUW ET AL.
	Examiner	Art Unit
	Ramsey Zacharia	1773

-- The MAILING DATE of this c mmunication appears n the cover she t with the correspondence address --

Period f r Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 June 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2 and 4-11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2 and 4-11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Pri rity under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Continued Examination Under 37 CFR 1.114

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 02 June 2003 has been entered.

Claim Rejections - 35 USC § 103

3. Claims 1, 2, and 8-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Holdcroft et al. (U.S. Patent 5,561,030) in view of Jonas et al. (U.S. Patent 5,766,515) and Cogan (U.S. Patent 4,477,963).

Holdcroft et al. is directed to electrically conductive polymer patterns and processes for their formation (column 1, lines 10-16). Such electrically conductive polymer patterns have traditionally been used as electrodes or circuits in the electronics industry (column 2, lines 47-54). The process comprises depositing a film of a π-conjugated polymer, irradiating the film in a pattern, removing the non-irradiated portions, and then oxidizing the film (column 3, lines 51-60). The π-conjugated polymer may be a 3,4-substituted polythiophene, such as a 3,4-

alkoxythiophene (column 4, lines 47-59). The film may be deposited on a polymer sheet (column 4, lines 18-22). Dissolved oxygen is involved in initiating the photoreaction, i.e. the dissolved oxygen reads on a photochemical (column 10, lines 44-50). The process may be used to form a pattern with a resolution of 2 microns (column 12, lines 15-32). Holdcroft et al. apply the polymer film by casting a solution of the polymer in an organic solvent onto the substrate (column 11, lines 8-13).

Holdcroft et al. do not teach that the electrically conductive polymer is a polyacid salt of poly-3,4-alkoxythiophene. Moreover, while Holdcroft et al. teach that their process has a resolution of 2 microns, there is no explicit teaching that the lines of the pattern are spaced apart at a distance of 10 microns or less.

Jonas et al. teach a conductive material comprising a 3,4-dioxyalkylene substituted polythiophene wherein the alkylene group may be a C_{1-4} alkyl group, which includes methylene, ethylene, and propylene, and an organic compound comprising polyhydroxyl, dihydroxy, carbonyl, lactam, and/or amide groups (column 1, lines 25-48). The conductive material is used in areas requiring good electrical conductivity, such as in forming electrodes (column 3, lines 5-15). The conductive material is used in the cationic form so that it may be applied from an aqueous solution (column 2, lines 12-33). A polyacid, such as polystyrene sulfonic acid, may be used as the anion (claim 3).

Cogan discloses that it is known in the semiconductor industry to separate electrodes by only a few microns in devices operating at high frequency (column 1, lines 10-27). A spacing of 4 to 5 microns is cited as suitable (column 6, lines 1-26).

One of ordinary skill in the art would be motivated to use the anion of a 3,4-dioxyalkylene substituted polythiophene and organic compound as taught by Jonas et al. as the π-conjugated polymer of Holdcroft et al. so that the polymer will be soluble in water as opposed to organic solvents, thus leading to reduce costs environmental impact and cost associated with environmental regulations regarding the use of organic solvents.

Moreover, one of ordinary skill in the art would be motivated to select a spacing of the electrodes depending on the desired use of the finished product. In applications where the device is desired to operate at high frequencies, it would have been obvious to space the electrodes4 to 5 microns apart.

Regarding claim 2, the limitations of this claim are taken to be met at least because it is directed to an optionally present material.

Therefore, the inventions of claims 1, 2, and 8-11 would have been obvious to one of ordinary skill in the art at the time the inventions were made.

4. Claims 1, 2, and 4-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Selbrede (U.S. Patent 5,319,491) in view of Jonas et al. (U.S. Patent 5,766,515).

Selbrede teaches an optical display device comprising a matrix of pixels (Column 5, lines 17-30). In one embodiment, each pixel comprises light guidance substrate, an elastomer layer, and a pair of interdigitated electrodes spaced 1 micron apart (column 10, lines 22-55). The device may further comprise a field effect transistor (column 13, lines 7-15).

Regarding claim 5, the device comprises a matrix of pixels, each one of which comprises a pair of interdigitated electrodes. This reads on the limitations of claim 5 since there must be

some insulating material between the electrodes for the pixels to operate independently and the display device to function properly.

Selbrede does not teach forming the electrodes out of the salt of a poly (3,4-substituted thiophene), but rather uses indium-tin oxide as the material for the electrodes.

Jonas et al. teach a conductive material comprising a 3,4-dioxyalkylene substituted polythiophene wherein the alkylene group may be a C_{1-4} alkyl group, which includes methylene, ethylene, and propylene, and an organic compound comprising polyhydroxyl, dihydroxy, carbonyl, lactam, and/or amide groups (column 1, lines 25-48). The conductive material is used in areas requiring good electrical conductivity, such as in forming electrodes in electroluminescent and LCD displays (column 3, lines 5-15). The conductive material is used in the cationic form so that it may be applied from an aqueous solution (column 2, lines 12-33). A polyacid, such as polystyrene sulfonic acid, may be used as the anion (claim 3). The 3,4-dioxyalkylene substituted polythiophene is used as a replacement for indium-tin oxide because it is simpler and less expensive to use (column 1, lines 5-23).

One of ordinary skill in the art would be motivated to use the anion of a 3,4-dioxyalkylene substituted polythiophene and polyacid as taught by Jonas et al. in place of the indium-tin oxide in the display device of Selbrede to reduce production costs of the resulting device.

Regarding claim 2, the limitations of this claim are taken to be met at least because it is directed to an optionally present material.

Regarding claim 8, replacing the indium-tin oxide in the electrodes with the 3,4-dioxyalkylene substituted polythiophene of Jonas et al. would result in a pixel that substantially consists of organic polymeric materials.

Therefore, the inventions of claims 1, 2, and 4-8 would have been obvious to one of ordinary skill in the art at the time the inventions were made.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ramsey Zacharia whose telephone number is (703) 305-0503. The examiner can normally be reached on Monday through Friday from 9 to 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Thibodeau, can be reached on (703) 308-2367. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Ramsey Zacharia
Primary Examiner
Tech Center 1700